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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/967,177	09/28/2001	Dallas J. Bergh	01RE099 ALBR:0099	5935

7590 04/05/2005

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EXAMINER

NGUYEN, DANNY

ART UNIT PAPER NUMBER

2836

DATE MAILED: 04/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary

Application No.

09/967,177

Applicant(s)

BERGH ET AL.

Examiner

Danny Nguyen

Art Unit

2836

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 12/20/2004 with respect to the amended claims 1, 11, 19, 29, and 34 have been considered but are moot in view of the new ground(s) of rejection.

Regarding claims 1, 11, 19, 29, and 34, applicant argued that a leakage current suppression circuit only suppresses the leakage current in the control circuit, but the claims are not limited to this type of leakage current.

Specification

2. The specification is objected to for failing to comply with 37 CFR 1.71 (a) which requires "the specification must include a written description of the invention or discovery". The claims recite the current suppression circuit is coupled in parallel with the relay but the figures disclose that the current suppression circuit is instead in parallel with the series with combination of the relay and the solid state switch. And this is a stretch at best since the suppression circuit is connected in multiple locations to the solid-state switch.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1, 11, 19, and 29 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contains subject

matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The amended claims 1, 11, 19, and 29 recite "a leakage current suppression circuit is coupled electrically in parallel with the relay". Such limitation is not described in the specification.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 1-3, 7-10, 19, 20, 26-28, 34-38 are rejected under 35 U.S.C. 102(a) as being anticipated by Nevo (USPN 6,522,033).

Regarding claims 1, 3, 34-36, Nevo discloses control circuit for an electrical relay (e.g. see fig. 1 and 4), the circuit comprises a solid state switch (28) is coupled to a relay operator (K) to control energization of the relay operator; and a leakage current suppression circuit (e.g. 16, 17, 21, 24, 25) configured to be coupled electrically in parallel with the relay and the solid state to place the switch in a conducting state and thereby to energize the relay operator when a control signal current level is above a leakage current threshold, and to place the switch in a non-conducting state and thereby to de-energize the relay operator when the control signal level is below a leakage current threshold (e.g. col. 3, lines 7-14, lines 36-42, col. 4, lines 50-60).

Regarding claim 2, Nevo discloses the solid state switch (28) and the leakage current suppression circuit are coupled to a DC bus (15), and the solid state switch is configured to be coupled in series with the relay operator.

Regarding claims 7, 8, 26, 38, Nevo discloses a visual indicator (such as 55 and 56 in figure 2)

Regarding claims 9,10, 27, 28, Nevo discloses the leakage current suppression includes a pair of resistors (e.g. 24, 25) in series about a node (23).

Regarding claims 19, 20, Nevo discloses a control circuit for an electrical relay (fig. 1 and 4), the circuit comprises a relay (K), a solid state switch (28) is coupled in series with the relay, a leakage current suppression circuit (e.g. 16, 17, 21, 24, 25) configured to be coupled electrically in parallel with the relay and the solid state to place the switch in a conducting state and thereby to energize the relay operator when a control signal current level is above a leakage current threshold, and to place the switch in a non-conducting state and thereby to de-energize the relay operator when the control signal level is below a leakage current threshold (e.g. col. 3, lines 7-14, lines 36-42, col. 4, lines 50-60).

Regarding claim 37, Nevo discloses a capacitor (C1 in figure 4) for smoothing the DC signal.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 4-6, 11-18, 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nevo in view of Louis J. Vassos (USPN 3,633,070).

Regarding claims 4-6, 11, 12, 14, 23, 25, Nevo discloses a DC bus (15) for receiving the DC signal, a control signal condition circuit coupled to the DC bus for conditioning the DC signal (such as C1 is coupled across the DC bus 15 in figure 4), a solid state switch (28) is coupled in series with the relay, a leakage current suppression circuit (e.g. 16, 17, 21, 24, 25) configured to be coupled electrically in parallel with the relay and the solid state to place the switch in a conducting state and thereby to energize the relay operator when a control signal current level is above a leakage current threshold, and to place the switch in a non-conducting state and thereby to de-energize the relay operator when the control signal level is below a leakage current threshold (e.g. col. 3, lines 7-14, lines 36-42, col. 4, lines 50-60). Nevo does not disclose a rectifier circuit and a diode as claimed. Vassos discloses a leakage circuit protection (figure 2) comprises a rectifier circuit (44) and a diode (67) are coupled to the DC bus 46 for limiting the DC voltage signal . It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the protection circuit of Nevo to incorporate the rectifier circuit and the diode which are coupled to the DC bus as disclosed by Vassos in order to provide stabilized DC voltage level such that increasing operational reliability of the circuit.

Regarding claims 5, 13, 24, Nevo discloses a capacitor (C1 in figure 4) for smoothing the DC signal.

Regarding claims 15, 16, Nevo discloses a visual indicator (such as 55 and 56 in figure 2).

Regarding claims 17, 18, Nevo discloses Nevo discloses the leakage current suppression circuit includes a pair of resistors (24, 25) in series about a node (23).

6. Claims 29-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gernhardt et al (USPN 5,864,455) in view of Nevo. Gernhardt discloses terminal block relay assembly (such as fig. 1) comprises a terminal block including input terminals (26 and 28), output terminals (38 and 40), a bay (such recess 98) for receiving a relay (16), and connections (304 and 314) for routing signals between the terminals and the relay; a relay disposed in the bay and coupled to the connections, the relay having an operator (19); a circuit board (14) supported in the terminal block and coupled to the input terminals and to the relay operator via two of the connections (via conductors 30 and 36 and 42 and 44), but Gerhardt does not disclose the leakage current protection as claimed. Nevo discloses a protection circuit (fig. 1) comprises a solid state switch (28) is coupled to a relay operator (K) to control energization of the relay operator; and a leakage current suppression circuit (e.g. 16, 17, 21, 24, 25) configured to be coupled electrically in parallel with the relay and the solid state to place the switch in a conducting state and thereby to energize the relay operator when a control signal current level is above a leakage current threshold, and to place the switch in a non-conducting state and thereby to de-energize the relay operator when the control signal

level is below a leakage current threshold (e.g. col. 3, lines 7-14, lines 36-42, col. 4, lines 50-60). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the protection circuit of Gerhardt to incorporate a leakage current detection circuit as taught by Nevo in order to provide a better protection (col. 2, lines 45-57).

7. Claim 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nevo in view of Gerhardt et al. Nevo discloses all limitations of claim 19 as discussed above, but Nevo does not disclose the relay and the switch are supported as claimed. Gerhardt discloses a leakage current protector (fig. 1 and fig. 10) comprises the relay (16) and the switch (e.g. 232) are supported on the circuit board (14) and on a terminal block (e.g. terminal block shown in fig. 1). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the elements of protection circuit of Nevo to incorporate the relay and the switch are supported on the circuit board as taught by Gerhardt in order prevent components from being damage.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Danny Nguyen whose telephone number is (571)-272-2054. The examiner can normally be reached on Mon to Fri 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571)-272-2058. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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3/23/2005
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